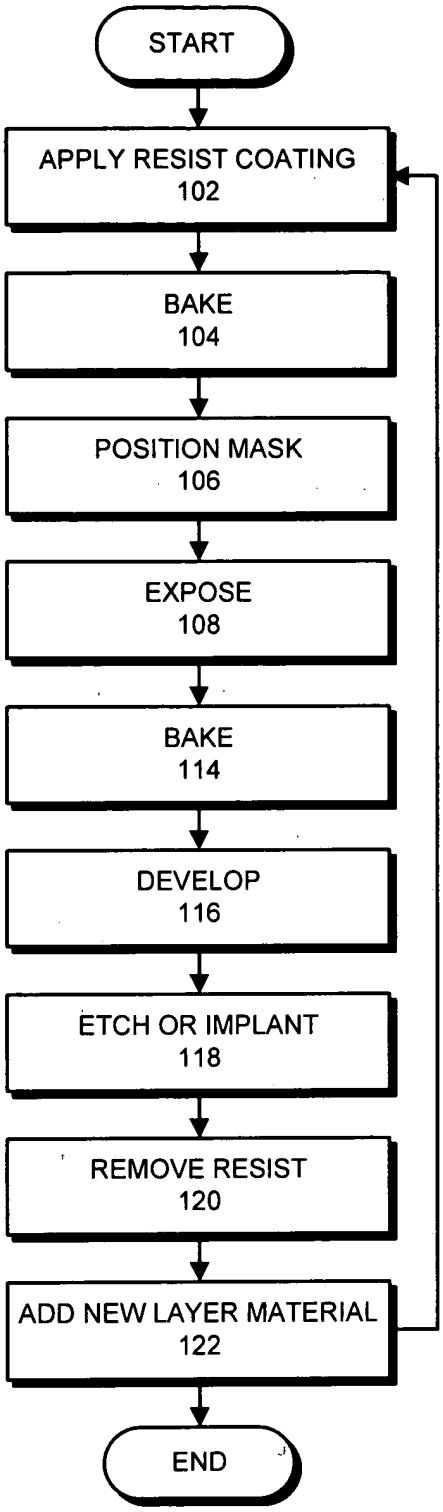
START
APPLY RESIST COATING
102
BAKE
104
POSITION MASK
106
EXPOSE
108
BAKE
114
DEVELOP
116
ETCH OR IMPLANT
118
REMOVE RESIST
120
ADD NEW LAYER MATERIAL
122
END

FIG. 1

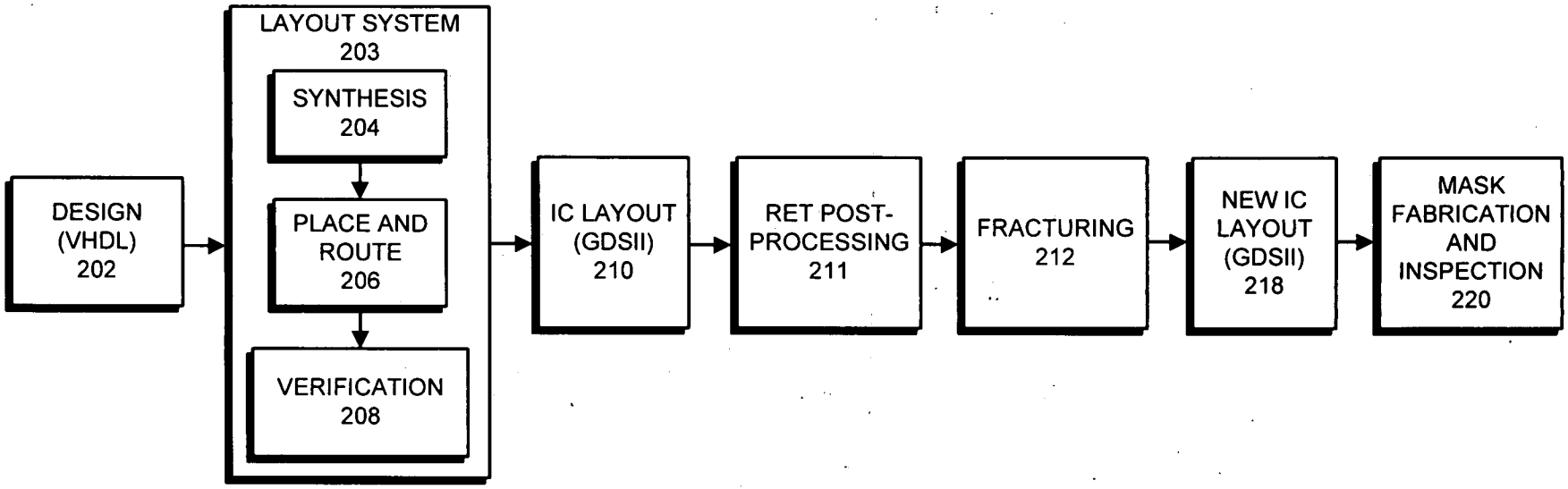
DESIGN
(VHDL)
202
LAYOUT SYSTEM
203
SYNTHESIS
204
PLACE AND
ROUTE
206
VERIFICATION
208
IC LAYOUT
(GDSII)
210
RET POST-
PROCESSING
211
FRACTURING
212
NEW IC
LAYOUT
(GDSII)
218
MASK
FABRICATION
AND
INSPECTION
220

FIG. 2

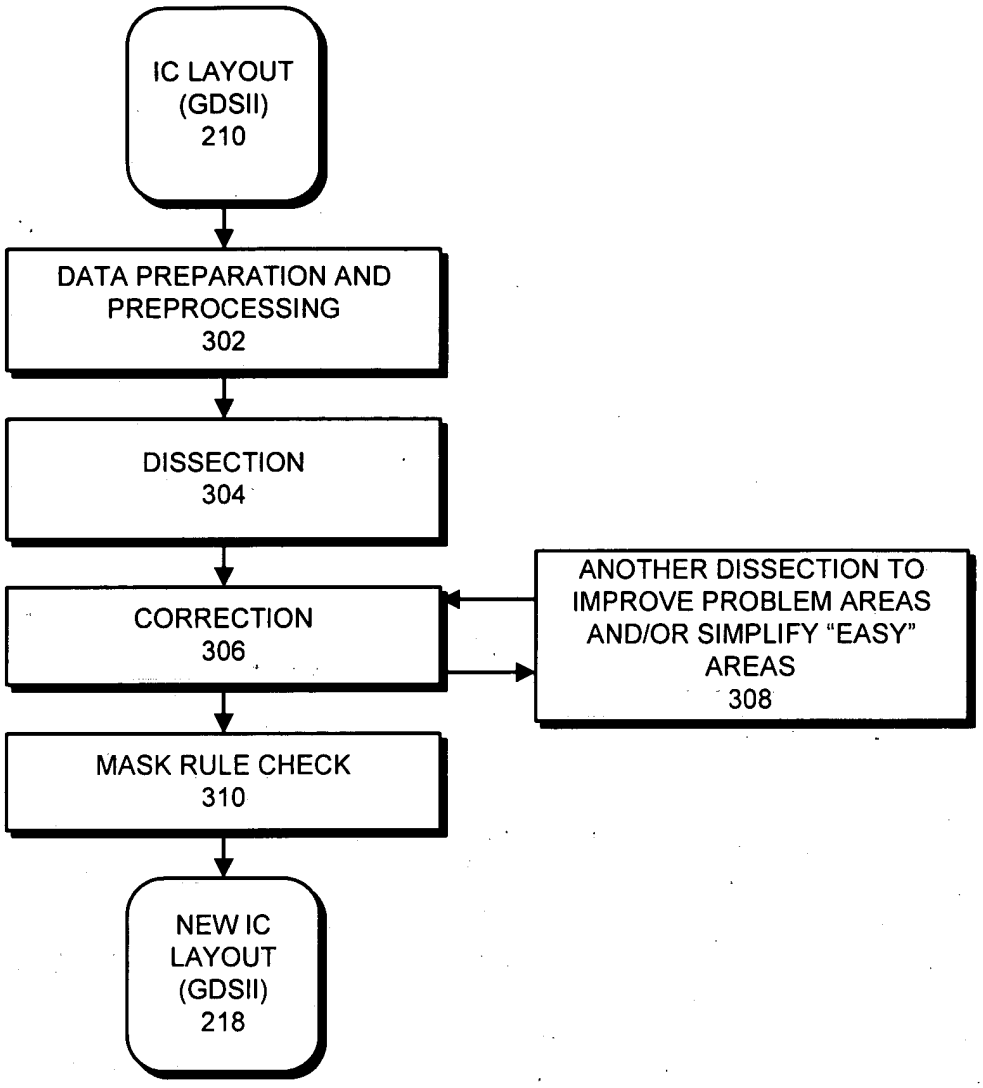
IC LAYOUT
(GDSII)
210
DATA PREPARATION AND
PREPROCESSING
302
DISSECTION
304
CORRECTION
306
ANOTHER DISSECTION TO
IMPROVE PROBLEM AREAS
AND/OR SIMPLIFY "EASY"
AREAS
308
MASK RULE CHECK
310
NEW IC
LAYOUT
(GDSII)
218

FIG. 3

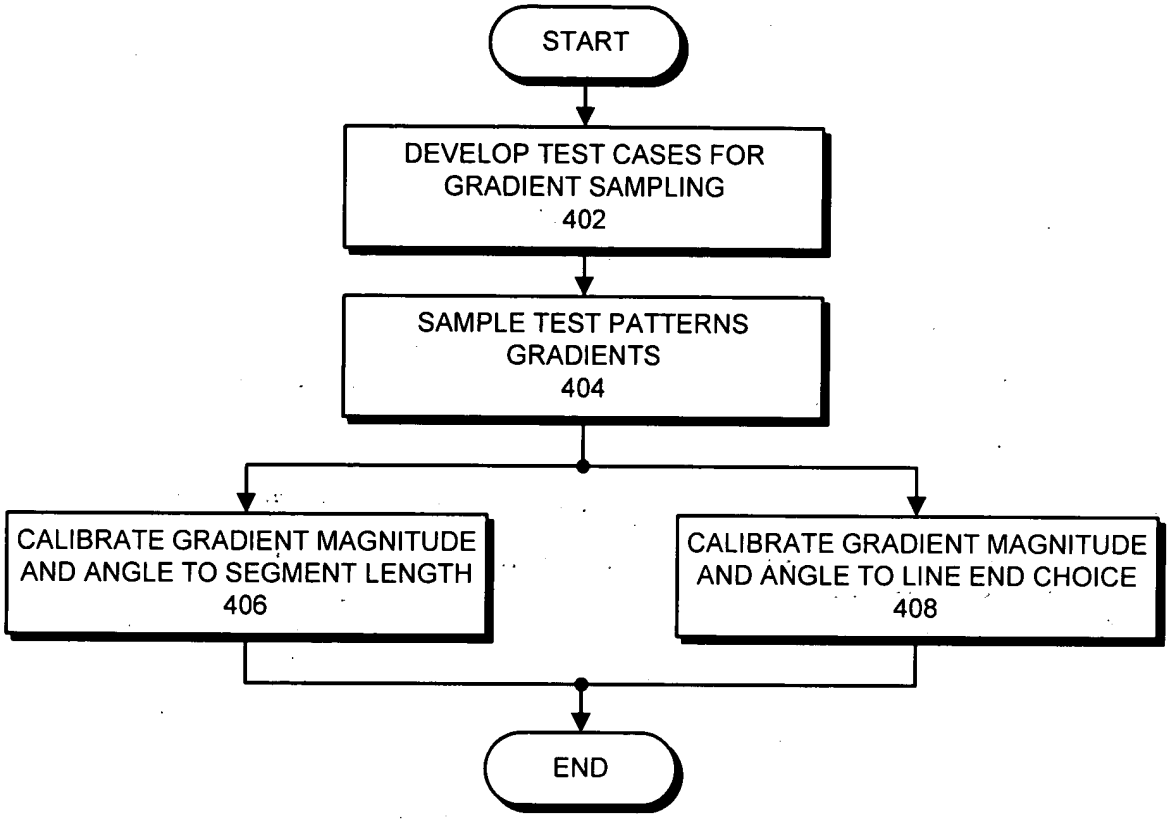

FIG. 4A

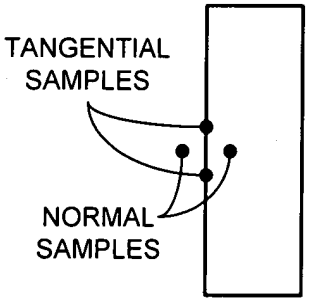

FIG. 4B

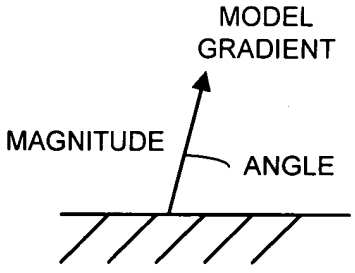

FIG. 4C

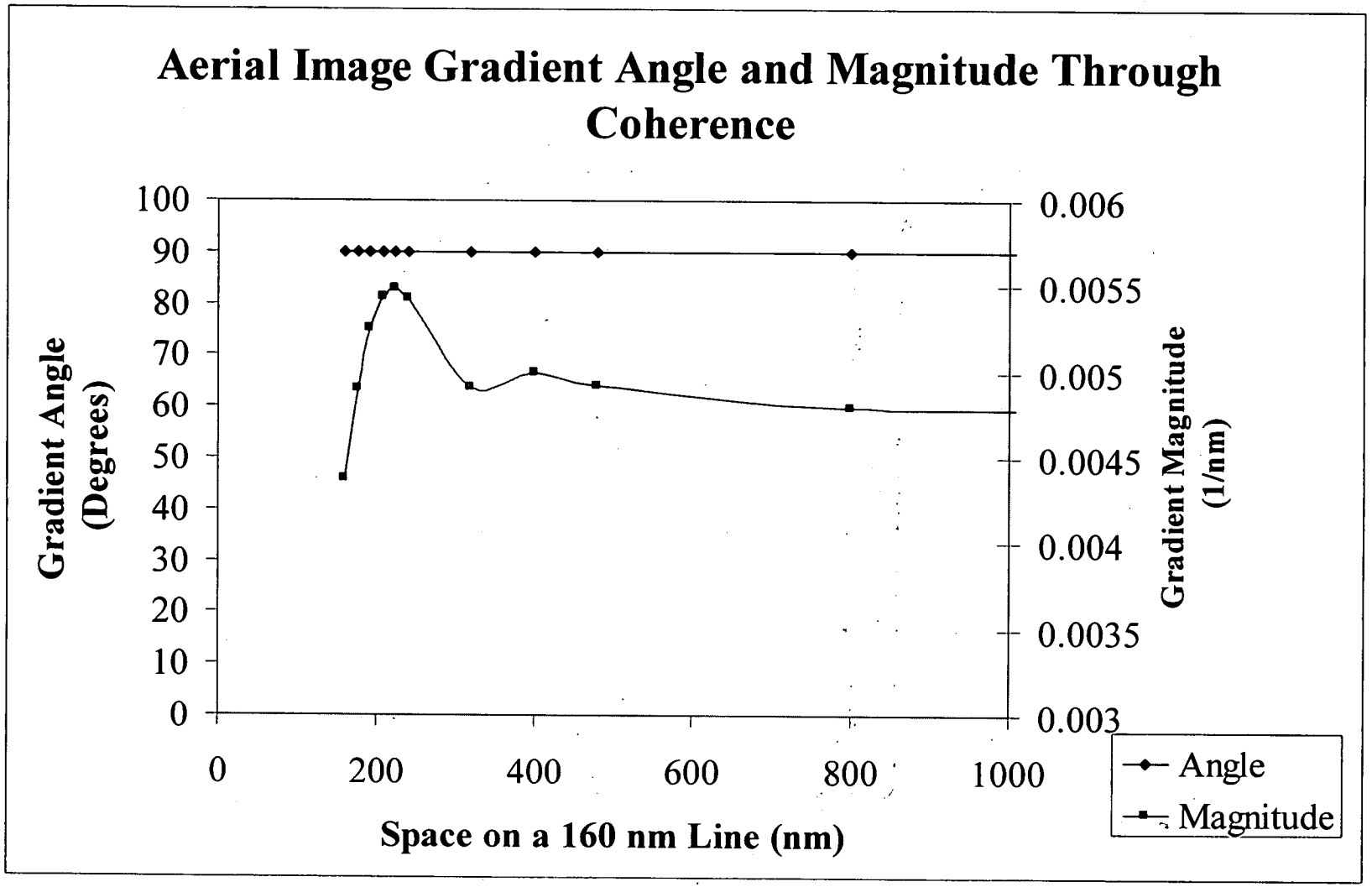
Aerial Image Gradient Angle and Magnitude Through Coherence
Gradient Angle (Degrees)
100
90
80
70
60
50
40
30
20
10
0
0.006
0.0055
0.005
0.0045
0.004
0.0035
0.003
Gradient Magnitude (1/nm)
0
200
400
600
800
1000
Space on a 160 nm Line (nm)
Angle
Magnitude

FIG. 5

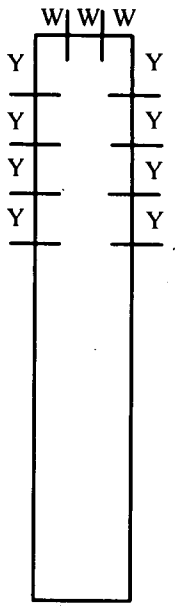

FIG. 6A

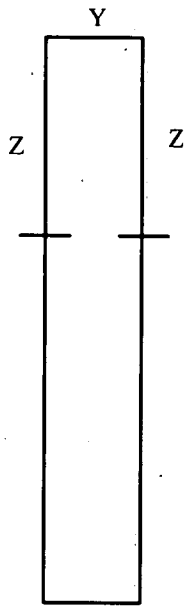

FIG. 6B

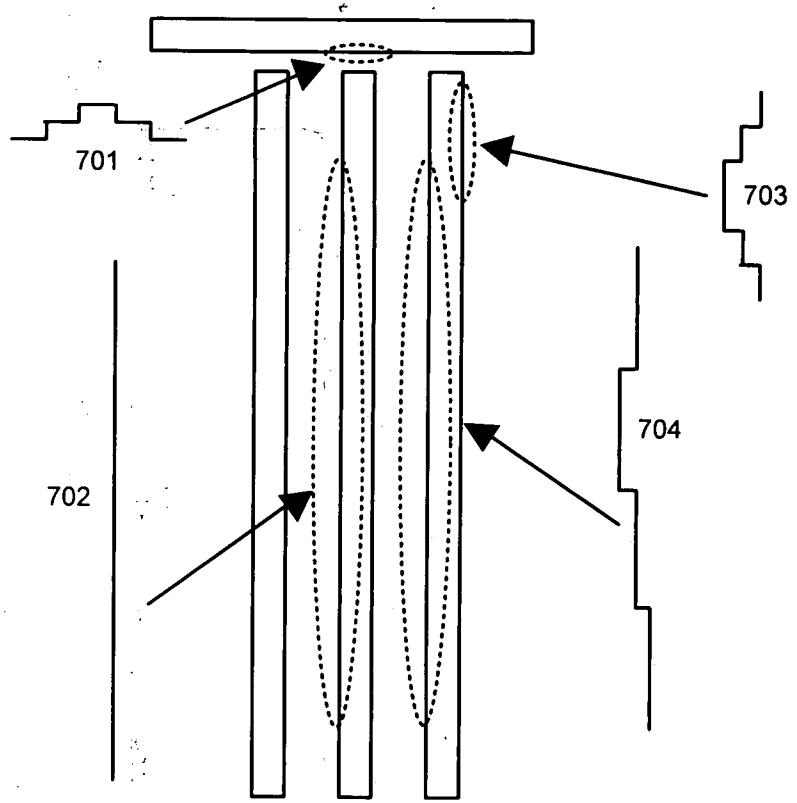

FIG. 7

Angle	Magnitude	Segment Length	Line End Choice
$89.5 \leq \theta \leq 90.5$	δ	∞	-
$85 \leq \theta < 89.5$ and $90.5 < \theta \leq 95$	δ	X nm	-
$\theta < 85$ and $95 < \theta$	δ	Y nm	-
δ	$r < 0.0044$	-	Dog Ears
δ	$r \geq 0.0044$	-	Line Extension

FIG. 8

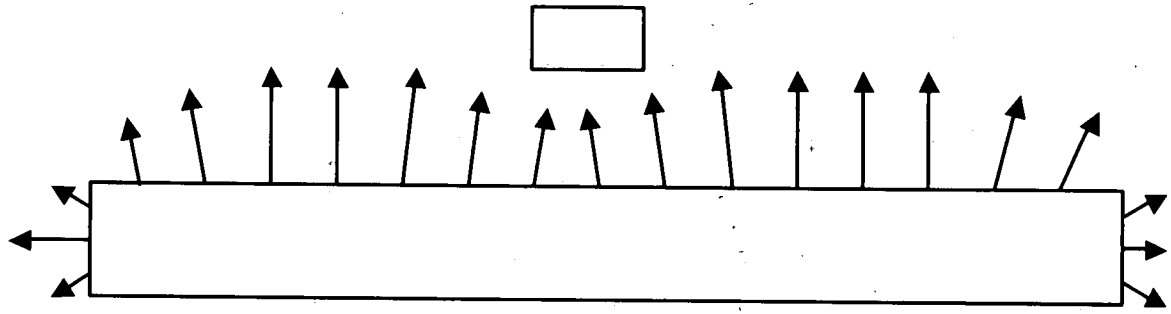

FIG. 9A

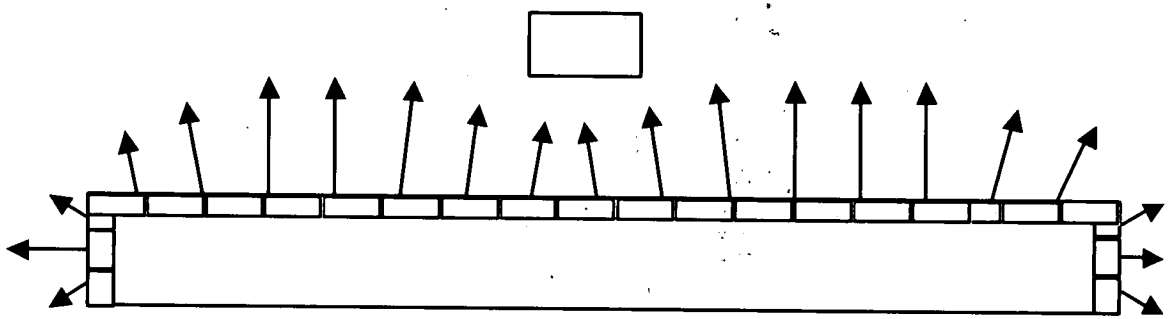

FIG. 9B

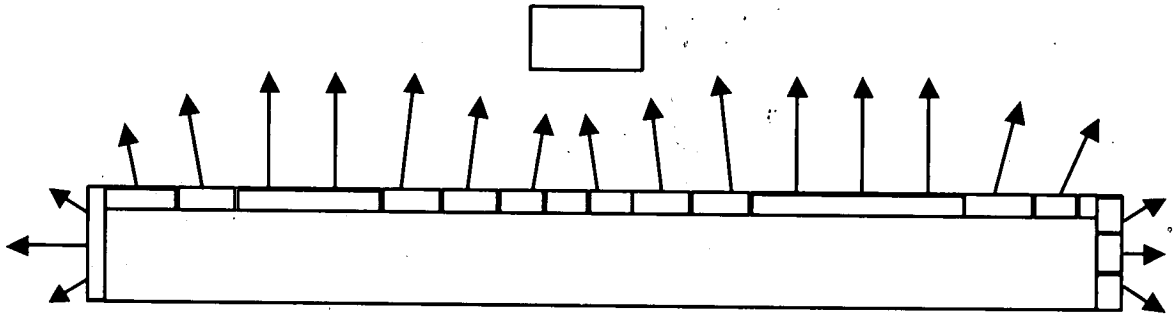

FIG. 9C